

### REMARKS/ARGUMENTS

The Examiner is thanked for the Office Action mailed November 30, 2007. The status of the application is as follows:

- Claims 1-26 are currently pending, and claims 23-26 have been added;
- Claims 3-4, 7-8, 14-15, 17 and 20-21 are objected to for depending on rejected base claims;
- Claims 1-2, 5, 9, 11-13, 16 and 22 are rejected under 35 U.S.C. 102(e) as being anticipated by Harris (US 6,480,572 B2); and
- Claims 1-2, 5-6, 11-13, 16 and 22 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Schaaf et al. (US 6,111,933) in view of Blake et al. (US 5,621,781).

The objection and rejections are discussed below.

#### **The Objection to Claims 3-4, 7-8, 14-15, 17 and 20-21**

The Examiner is thanked for indicating that claims 3-4, 7-8, 14-15, 17 and 20-21 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claim. Applicant reserves the right to rewrite the subject claims as indicated by the Examiner.

#### **The Rejection of Claims 1-2, 5, 9, 11-13, 16 and 22 under 35 U.S.C. 102(e)**

Claims 1-2, 5, 9, 11-13, 16 and 22 are rejected under 35 U.S.C. 102(e) as being anticipated by Harris. This rejection should be withdrawn because Harris does not teach each and every element as set forth in the subject claims and, therefore, does not anticipate claims 1-2, 5, 9, 11-13, 16 and 22.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987). MPEP §2131.

Independent **claim 1** is directed towards a dose-modulated irradiating system that includes at least one electrostatic control electrode arranged to electrostatically reduce an intensity of the electron beam and a biasing means for applying a time-varying electrical bias to the electrostatic control electrode to vary the intensity of the electron beam. The Office asserts

that Harris teaches the above-noted claim aspects. However, Harris does not teach or suggest the subject claim aspects.

More particularly, Harris relates to a dual filament, electrostatically controlled focal spot for x-ray tubes. As disclosed in Harris, a dual filament (72, 74) x-ray tube assembly (16) includes a cathode assembly (62) having a cathode cup which is subdivided into a plurality of electrically insulated deflection electrodes (64, 66, 68; 110, 112). Electron beams emitted from the filament (72, 74) are electrostatically focused and controlled by applying potentials to different ones of the deflection electrodes (64, 66, 68; 110, 112). (See Abstract). The deflection electrodes (64, 68) are end deflection electrodes and the deflection electrode 66 is a common center deflection electrode. (See column 4, lines 61-63).

A desired filament (72, 74) is selected by the order in which the end deflection electrodes (64, 68) are tuned on. For example, powering the large electrode (68) enables the large filament (74), while turning on the small deflection electrode (64) first enable the small filament (72). (See column 6, lines 30-35). The selected filament (72, 74) is focused by oscillating voltages on the deflection electrodes to cause the beam to oscillate between two impingement positions. (See column 6, lines 54-56). Hence, Harris teaches a dual filament x-ray tube that includes deflection electrodes that determine which filament is selected and that focus the beam from the selected filament.

The Office asserts that the deflection electrodes (64, 66, 68; 110, 112) teach at least one electrostatic control electrode arranged to electrostatically reduce an intensity of the electron beam. As discussed above, the deflection electrodes (64, 66, 68; 110, 112) are used to select a desired filament to be used between the two filaments (72, 74) and to focus the beam from the selected filament (72, 74) on one or two positions. This does not teach or suggest at least one electrostatic control electrode arranged to electrostatically reduce an intensity of the electron beam.

The Office also asserts that column 1, lines 26-39, of Harris teaches a biasing means for applying a time-varying electrical bias to the electrostatic control electrode to vary the intensity of the electron beam. However, column 1, lines 26-39, of Harris relates to modulating the position or size of the focal spot between two or more positions or sizes to create two distinct point sources of radiation. Hence, the referenced section of Harris does not teach or suggest

varying the intensity of the electron beam, let alone a biasing means for applying a time-varying electrical bias to the electrostatic control electrode to vary the intensity of the electron beam.

In view of the above, it is readily apparent that Harris does not teach or suggest the aspects recited in claim 1. Accordingly, this rejection should be withdrawn.

Independent **claim 13** recites aspects similar to those recited in claim 1. As such, the above discussion of the rejection of claim 1 applies *mutatis mutandis* to claim 13, and this rejection should be withdrawn.

**Claims 2, 5, 9, 11-12, 16 and 22** depend either directly or indirectly from claims 1 or 13 and are allowable at least by virtue of their dependencies.

**The Rejection of Claims 1-2, 5-6, 11-13, 16 & 22 under 35 U.S.C. 103(a)**

Claims 1-2, 5-6, 11-13, 16 and 22 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Schaaf et al. in view of Blake et al. This rejection should be withdrawn because the combination of Schaaf et al. and Blake et al. does not teach or suggest all the limitations of the subject claims and, therefore, the Office has failed to establish a *prima facie* case of obvious with respect to the subject claims.

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art.  
*In re Royka*, 490 F.2d 981, (CCPA 1974). MPEP §2143.03.

Independent **claim 1** is directed towards a dose-modulated irradiating system that includes at least one electrostatic control electrode arranged to electrostatically reduce an intensity of the electron beam and a biasing means for applying a time-varying electrical bias to the electrostatic control electrode to vary the intensity of the electron beam. The Office asserts that the combination of Schaaf et al. and Blake et al. teaches the above-noted claim aspects. However, the combination of Schaaf et al. and Blake et al. does not teach or suggest the subject claim aspects.

Schaaf et al. relates to an x-ray tube (12) including a means (15, 22, 23) for influencing the electron flow through the X-ray tube (12) and piezoelectric transformer for generating a control voltage for the means (15, 22, 23). (See Abstract). As disclosed in Schaaf et al. such influence includes switching the x-ray tube (12) on and off. (See column 5, line 23, to column 6,

line 4). Blake et al. relates to x-ray tube (10) having a cathode having a filament (12). (See column 2, lines 51-54). Hence, Schaaf et al. and Blake et al. disclose piezoelectric transformer based circuitry for turning an x-ray tube on and off, and an x-ray tube having a filament.

The Office asserts that the means (15, 22, 23) for influencing the electron flow through the X-ray tube (12) of Schaaf et al. teaches at least one electrostatic control electrode arranged to electrostatically reduce an intensity of the electron beam as recited in claim 1. However, the means (15, 22, 23) does not teach or suggest the subject claim aspects. Contrary to this assertion, the means (15, 22, 23) instead turns the x-ray tube on and off, as discussed above, which does not teach or suggest the subject claim aspects.

The Office also asserts that the Abstract and column 5, lines 23+, teaches a biasing means for applying a time-varying electrical bias to the electrostatic control electrode to vary the intensity of the electron beam. However, as discussed above the Abstract and column 5, lines 23+, disclose using piezoelectric transformer based circuitry to turn an x-ray tube on and off.

In view of the foregoing, this rejection should be withdrawn.

Independent **claim 13** recites aspects similar to those recited in claim 1. As such, the above discussion of the rejection of claim 1 applies *mutatis mutandis* to claim 13, and this rejection should be withdrawn.

**Claims 2, 5, 9, 11-12, 16 and 22** depend either directly or indirectly from claims 1 or 13 and are allowable at least by virtue of their dependencies.

#### **New Claims 23-26**

Newly added claims 23-26 include aspects related to the at least one electrostatic control electrode arranged to electrostatically reduce an intensity of the electron beam and a biasing means for applying a time-varying electrical bias to the electrostatic control electrode to vary the intensity of the electron beam. As discussed *supra*, neither Harris nor Schaaf et al. teaches or suggest such claim aspects. No new matter has been added. Entry and allowance of claims 23-26 is respectfully requested.

Application No. 10/541,563

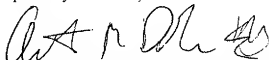
Amdt. Dated: February 21, 2008

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Conclusion

In view of the foregoing, it is submitted that the claims distinguish patentably and non-obviously over the prior art of record. An early indication of allowability is earnestly solicited.

Respectfully submitted,



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